

## REMARKS

Claims 13-23 are currently pending. Applicant notes with appreciation the indication that claims 14, 15, 17-19, 22 and 23 have been allowed. Applicant respectfully submits that claims 13, 16, 18, 20 and 21 are also in allowable form for at least the reasons given below.

The Office Action includes an objection to the claim, noting that the word "with" was inadvertently omitted from the last line thereof. Applicant notes with appreciation the Examiner's diligence in this regard. By the above, claim 18 is proposed to be amended to include this missing term. Entry of this change is respectfully requested.

The Office Action includes a rejection of claims 13, 16, 18, 20 and 21 under 35 U.S.C. §102(b) as allegedly being anticipated by the Antson et al. patent (U.S. Patent No. 4,416,933). This rejection is respectfully traversed.

As the undersigned understands the rejection, the Office is of the opinion that because Antson provides a chemical protective layer without voltage losses and keeps lateral conductivity at a low level, it acts as an "electric field emission enhancing layer," and further that the term "enhancing" is a broad term, meaning nearly any beneficial change.

Applicant respectfully submits that this interpretation is not "the broadest reasonable interpretation consistent with the specification" as is required by the *en banc* decision in *Phillips v. AWH Corp.*, 415 F.3d 1306, 75 U.S.P.Q.2d 1321 (Fed. Cir. 2005), for at least two reasons.

First, the phrase "electric field emission" or simply "field emission" invokes the idea of a form of quantum tunneling in which electrons pass through a barrier in the

presence of a high electric field. Stated differently, it is a surface or boundary interface phenomenon wherein the phrase "electric field emission enhancing layer" clearly means more electrons pass through to the dielectric layer than would be present in absence of the electric field emission enhancing layer. The number of electrons to activate the phosphor can be increased, and the field emission enhancing layer acts to increase the number of electrons by increasing quantum tunneling probability. Hence, "field emission enhancing" has a quantum physical meaning. The question then becomes whether or not the chemical protection layer 3 fits this description.

First, based on the applied art, the chemical protection aspect of the layer would have no effect on field emission. Second, if the chemical protection layer does in fact not provide voltage losses as purported by Antson et al., the lack of voltage losses would not create an enhancement effect. At best, it would have no effect at all, neither an enhancement or detrimental effect.

Third, if the chemical protective layer of Antson et al. actually keeps the lateral conductivity at a low level, as disclosed in column 4, lines 26-36, it is due to the titanium oxide film being thin "because there is a desire to keep the lateral conductivity at a low level in order that the edge of the bottom figure should remain sharp." It is also noted that column 4, lines 42 and 43 states that the titanium oxide would not have "an electric field promoting diffusion." Hence, the third reason that Antson et al. has no bearing on the patentability of the claims is that the Antson et al. titanium oxide chemical protection layer does not actually promote or enhance electric field emission. Even if one were to assume, *arguendo*, that the thinness of the layer does effectively reduce lateral conductivity, that simply reduces the adverse

effect of having the layer at all. Stated differently, by implication some electrons at the edge of the figure travel laterally and become unavailable for luminescence in the active layer 6. Hence, the chemical protection layer regardless of its thickness, actually deteriorates the availability of electrons.

Finally, even if one were to assume *arguendo* that the chemical protection layer 3 did not reduce the number of electrons available for luminescence, as the thinness would still not actually enhance the field emission effect, which does not involve conductivity but rather electrons passing through a barrier or interface.

In light of the foregoing, applicant respectfully submits that even in the absence of consideration of the specification, the claims have been interpreted improperly insofar as the language of the claims, even given a broad interpretation, is not met by Anton et al.

Additionally, when viewed in light of the specification which deals with field emission occurring in the material having fine pores or gaps to allow electrons to penetrate as mentioned at page 7, lines 15 and 16 and page 7, lines 28-33 where the electric field emission enhancement layer makes it possible to obtain a greater amount of electric charges at the surface of the electrode contacting field emission layer and makes it possible to trap a large amount of electric charges in the surface of the dielectric layer, regardless of the electrical characteristics of that layer. Nothing in the applied art would teach or be suggestive of these features or the advantages identified immediately above.

Hence, it is respectfully submitted that when the claims are interpreted in light of the specification, their broadest reasonable interpretation consistent with the

specification would not include reading the chemical protection layer 3 of the Antson et al. patent on Applicants' claimed "electric field emission enhancing layer".

In light of the foregoing, applicants respectfully request reconsideration and withdrawal of the rejection based on the Antson et al. patent.

These arguments apply equally well to each of the independent claims 13, 16, 18 and 20, each of which includes similar features. Claim 21 includes a second electric field emission enhancing layer identified in the Office Action as layer 9 of Figure 1, which is disclosed as having the function of chemical protection and is best believed to be implied to have the same structure and/or chemical composition as the chemical protection layer 3. Hence, the same arguments as discussed above apply equally well.


In light of the foregoing, applicants respectfully request reconsideration and allowance of the above-captioned application. Should any residual issues exist, the Examiner is invited to contact the undersigned at the number listed below.

Respectfully submitted,

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